

INFORMATION REPORT

COUNTRY East Germany

SUBJECT Development of the Fanslau Magnetometer

DATE DISTR 29 December 1953

NO OF PAGES

PLACE
ACQUIRED

25X1

NO. OF ENCLS.
(LISTED BELOW)

DATE OF INFO

SUPPLEMENT TO
REPORT NO.

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF TITLE 18, SECTIONS 793 AND 794, OF THE U. S. CODE, AS AMENDED. TRANSMISSION OR REVELATION OF ITS CONTENTS TO OR RECEIPT BY AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. THE REPRODUCTION OF THIS PAPER IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

25X1

1. In 1946 Prof. Dr. Gerhard Fanselau began work on the development of a new field magnetometer. This was based on the previous work of Prof. Dr. Adolf Schmidt in 1926. The Wissenschaftlich-Technische Buero, responsible to the Soviet Control Commission, designated Fanselau to handle the task. He was required to report at regular intervals to the plant at Briesslang, near Neuen, and to produce the experimental model.
2. The Wissenschaftlich-Technische Buero assigned prof. Dr. Hans Haalck of the Geodätisches Institut, Potsdam, and (inu) Brennenkow, one of their own men, as expert advisors to assist in the development of the experimental model and procedures for its use. In the Fanselau instrument the quartz or agate knife edge was replaced by a steel band which was placed under some strain when the magnet was oriented horizontally and which did not give the necessary exactness in the measurement of the torsion-angle. Both of the experts were of the opinion that the replacement of the knife edge by a steel band presented no great improvement, especially as the Askania Werke had already improved the Schmidt field magnetometer.
3. Fanselau continued his work on the principle that only the knife edge would be replaced by the band and finally allowed production of the instruments to begin at VEB Askania Werke, Teltow. The first deliveries failed to meet the specifications, probably because of the inexperience of the firm with the manufacture of magnetic instruments. Communist China had, in the meantime, ordered a great number of the instruments. The Chinese were somewhat displeased with the first shipment but their opinions concerning more recent results are not yet known.
4. Fanselau's new field magnetometer was superior to the model of Adolf Schmidt because alloys were developed to replace the steel band used for the suspension of the magnet in a horizontal position. However, these alloys have been difficult to obtain in the Soviet Zone and procurement will continue to present many difficulties.
5. Haalck's and Brennenkow's suggestion for measuring the earth's magnetic components through the torsion-angle was taken over by the Askania Werke, Berlin-Friedenau. The principal worker on the project at this Askania Werke was Dipl.-Ing. Fritz Haalck, brother of Prof. Dr. Hans Haalck. At Askania Werke, Berlin-Friedenau.

CLASSIFICATION SECRET

[illegible]

25X1

25X1

SECRET

25X1

-2-

25X1

the so-called Universal-Torsions-Magnetometer (UTM) was developed and two experimental models were constructed. A measurement of the horizontal and vertical intensity of the earth magnetism for the Land Heese was carried out with these instruments in August 1953.

6. The principal differences between the Fanzelau and the Askania (East) instruments are:

- a. Prof. Fanzelau has kept the comparatively heavy magnet system of the original field magnetometer, whereas the weight of the magnet system of the UTM is about 300 milligrams.
- b. The Fanzelau apparatus uses the torsion only for the orientation of the magnetic axis of the magnet in the horizontal, whereas a torsion angle of 0.1° can be read with the UTM.
- c. The horizontal, as well as the vertical, position of the magnetic axis can be observed with the UTM by careful arrangement of the mirrors. These observations can be used in determining the vertical and horizontal components of the earth's magnetic field.

1. Comment. 250 of these instruments were ordered by the Chinese.

25X1

25X1

SECRET

25X1